Events with forward rapidity gaps

- Collaboration

- Used cuts

- Removing Beam Halo

- Em/Had Energy

- Tracks

- Run 277460:
    - Date: 2009.06.12
    - BSC1 veto, CLC veto, 2EM > 0.25 GeV
    - Nevents: 147275
    - Time: 00:05:05.1
    - Luminosity: 80E30 (<n> ~ 2.5)

Artur Swiech 09.03.09
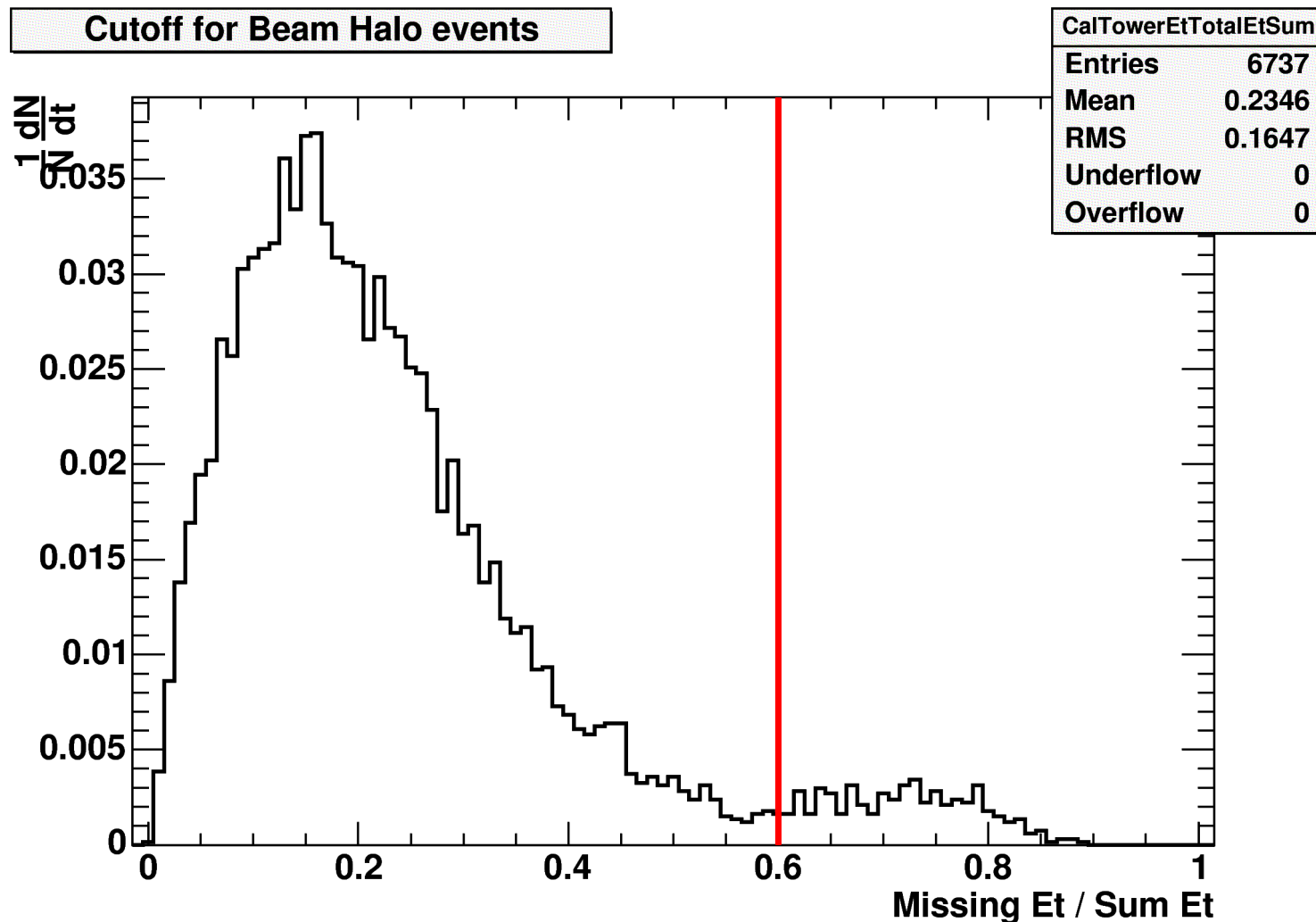
Collaboration

- Kiev:
  - Volodymyr Aushev
  - Laszlo Jenkovsky
  - Vladislav Libov
  - Denys Lontkovskyi
  - Inna Makarenko
- Fermilab:
  - Jonathan Lewis
  - Michael Albrow
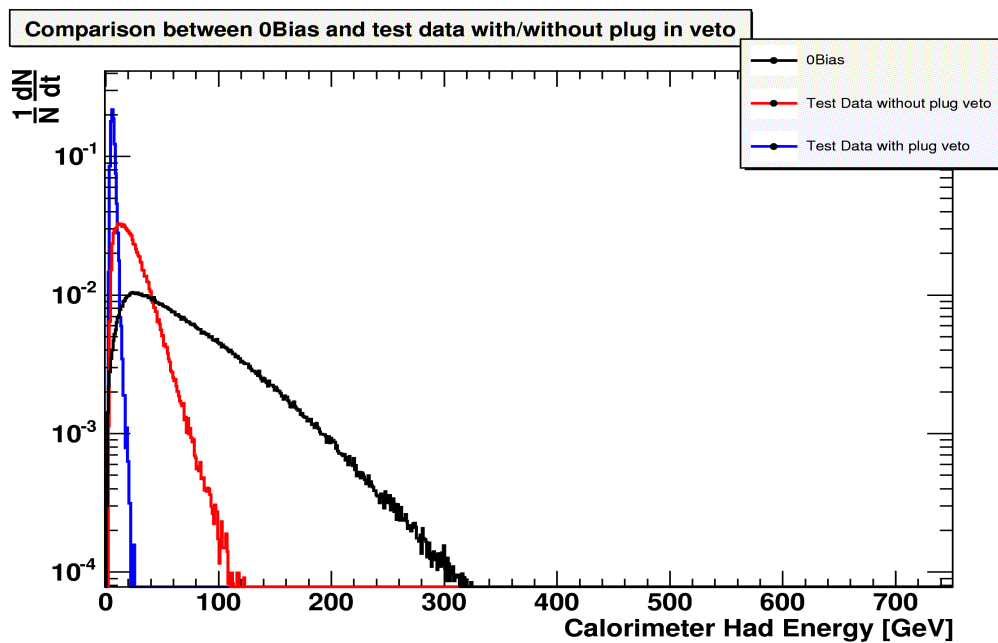 - Artur Swiech
  - Thanks to Niccolo Moggi

Used cuts

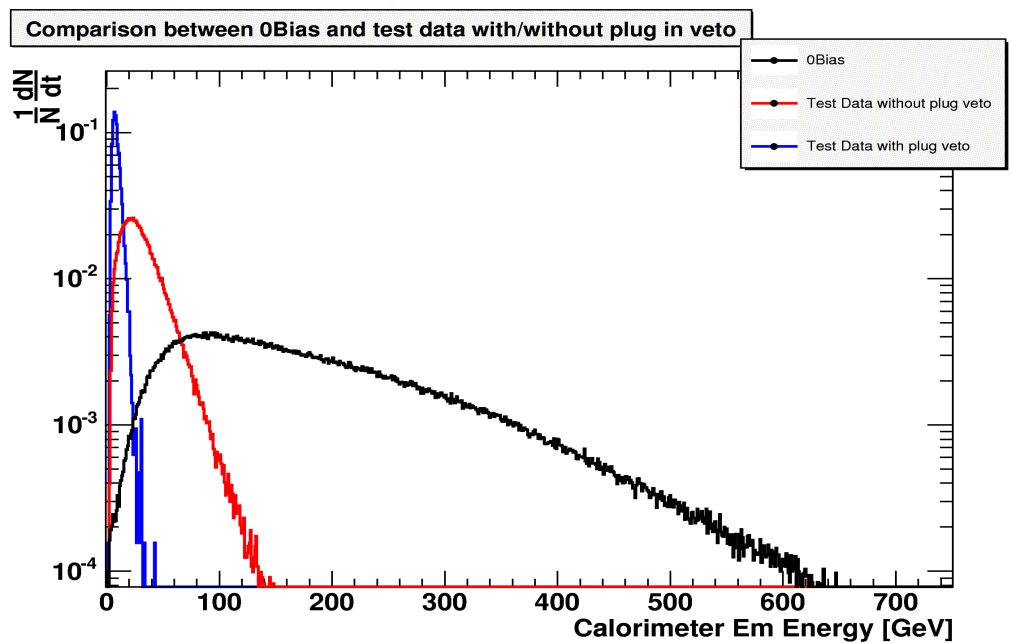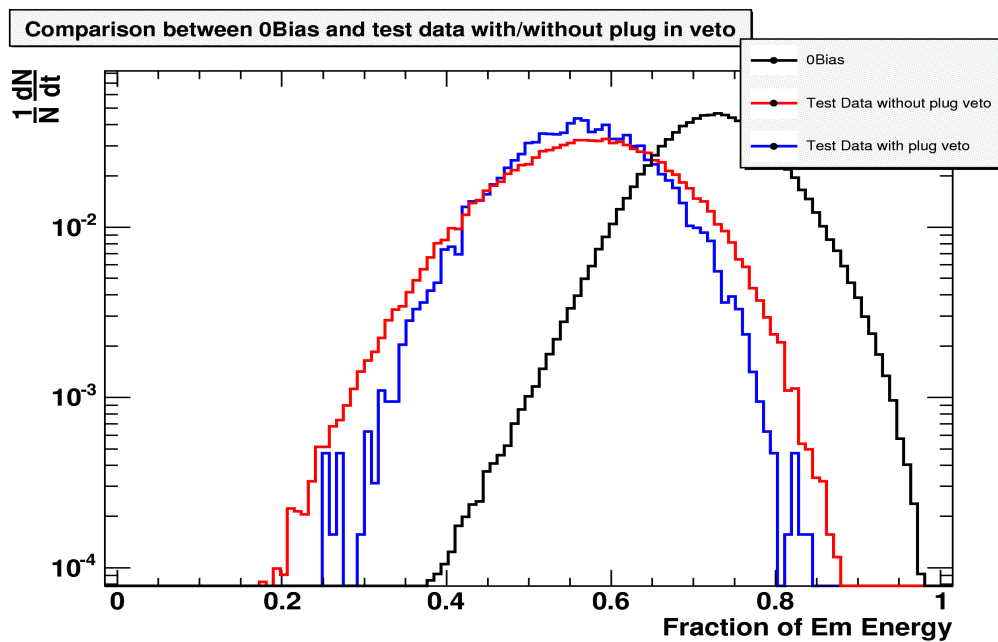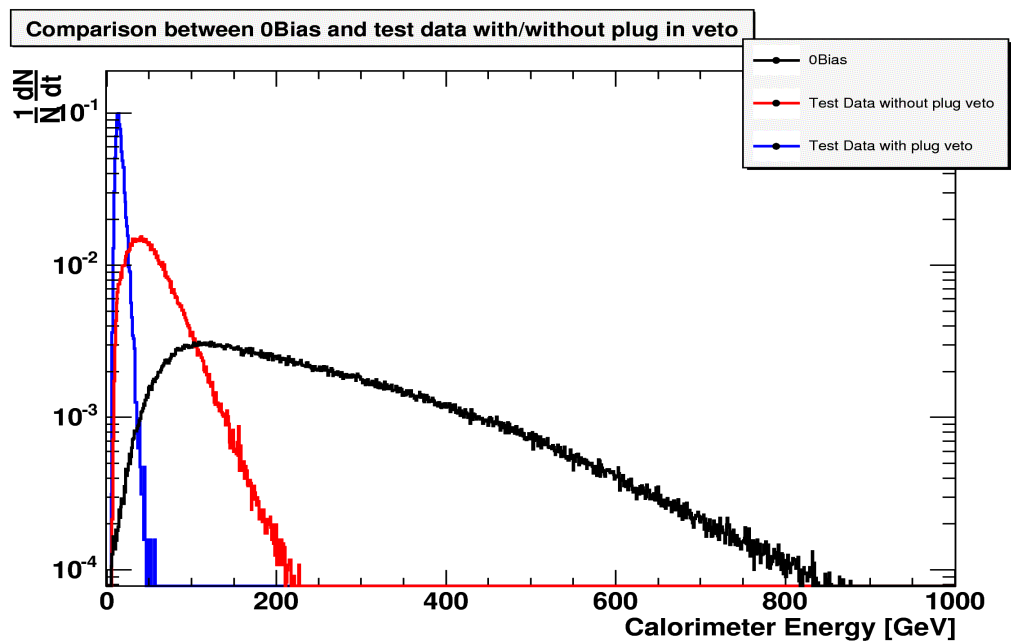- Number of Vertices = 0/1

- Sum of BSC1 ADC counts < 2500

- Sum of CLC ADC counts < 6300

- 2 EM Towers > 0.25 GeV

  - Number of events: 121053 (82%)

- Maximum Energy tower in 2.11-3.64 Eta range < 0.8 GeV *(optionaly)*

  - Number of events: 6737 (4.6%)

- Missing Et / Sum Et < 0.6

  - Number of events: 6366 (4.3%)

Removing Beam Halo

- Directly scanned 41 events with 0 tracks, 19 of them were beam halo events. All halo events had (Missing Et / Sum Et) > 0.6, other < 0.6

Em/Had Energy
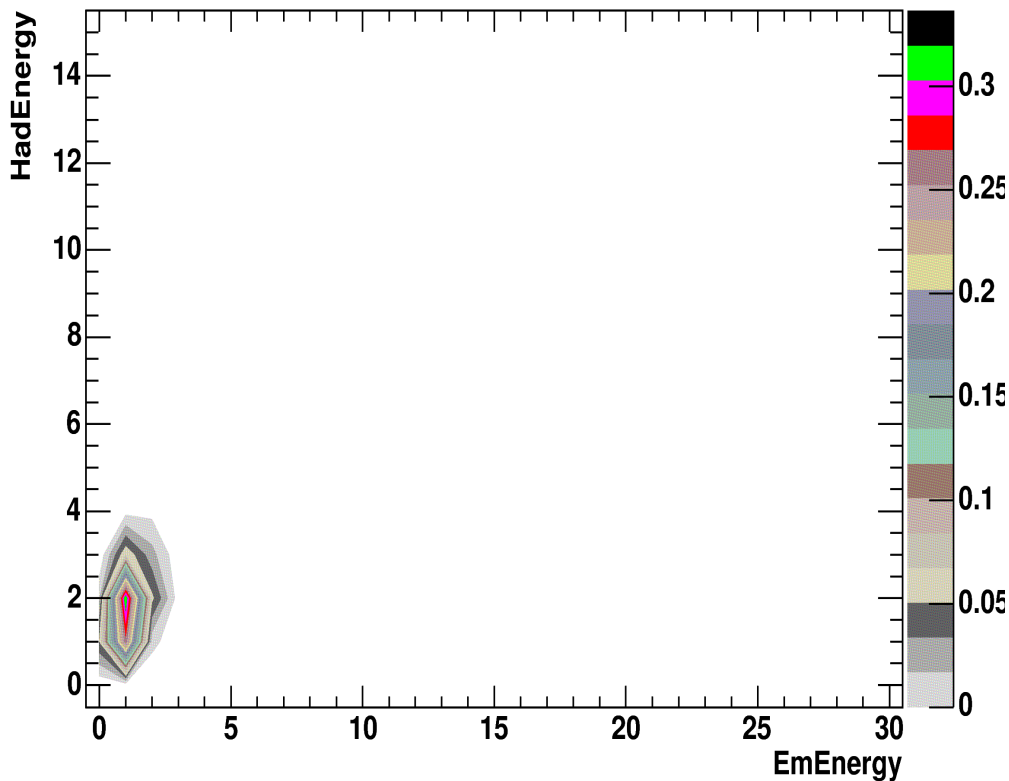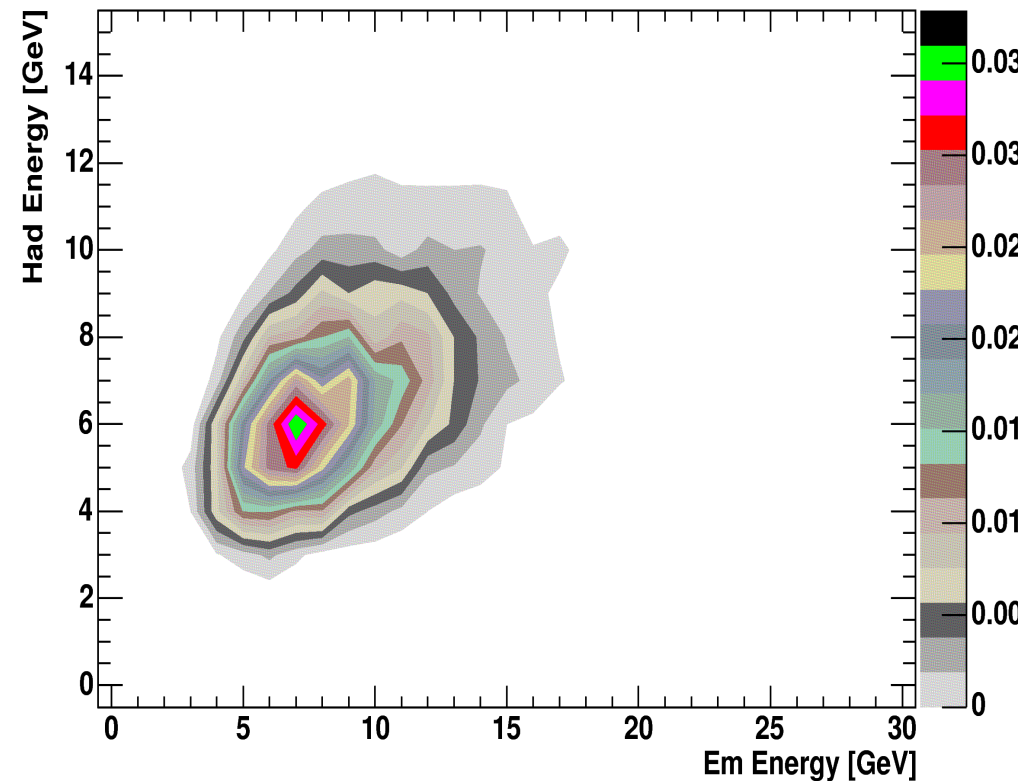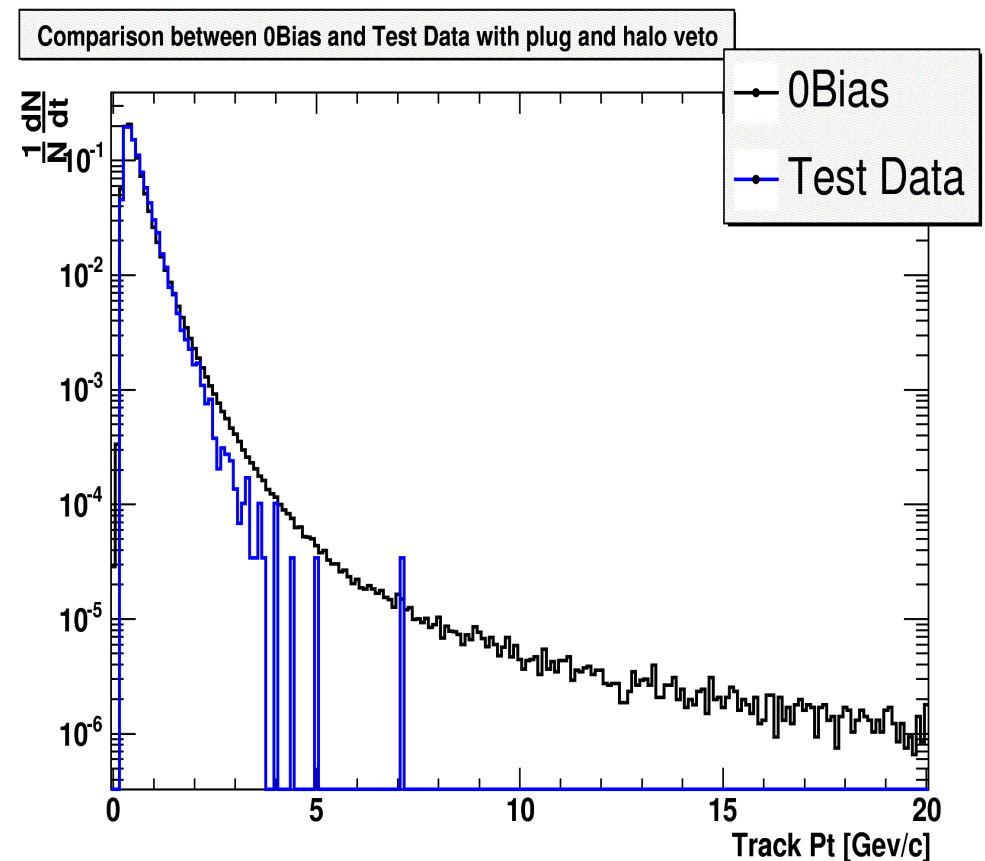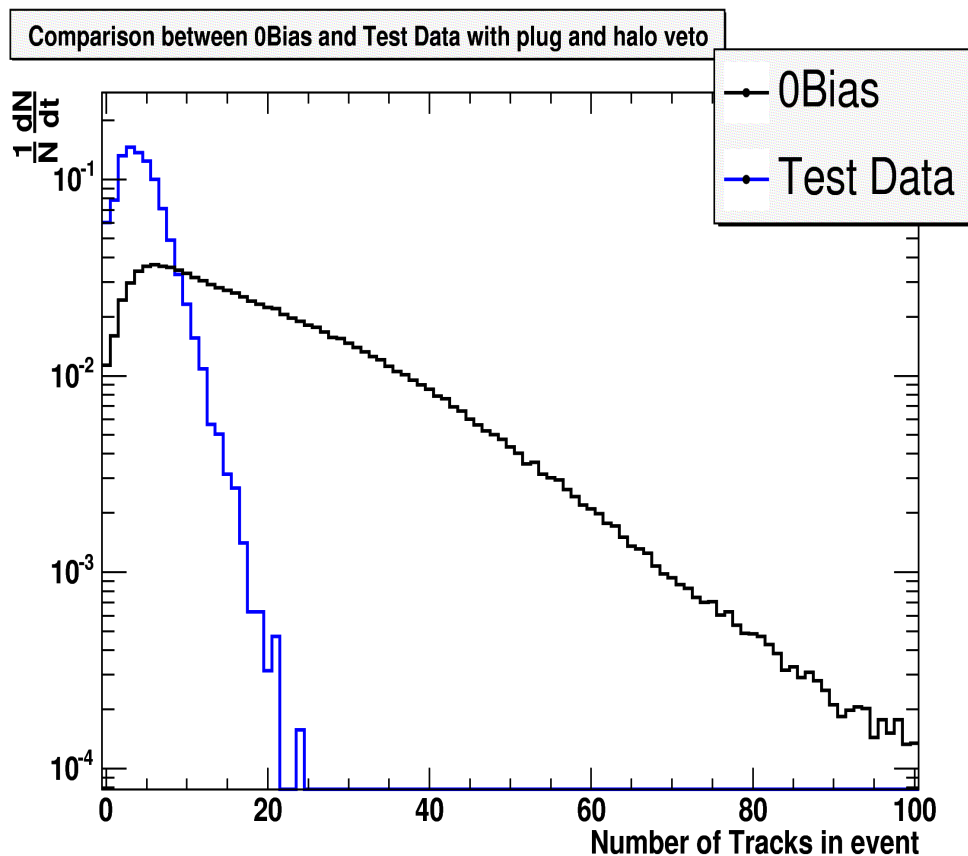
Em/Had Energy

Comparison between Test Data and noise

Tracks

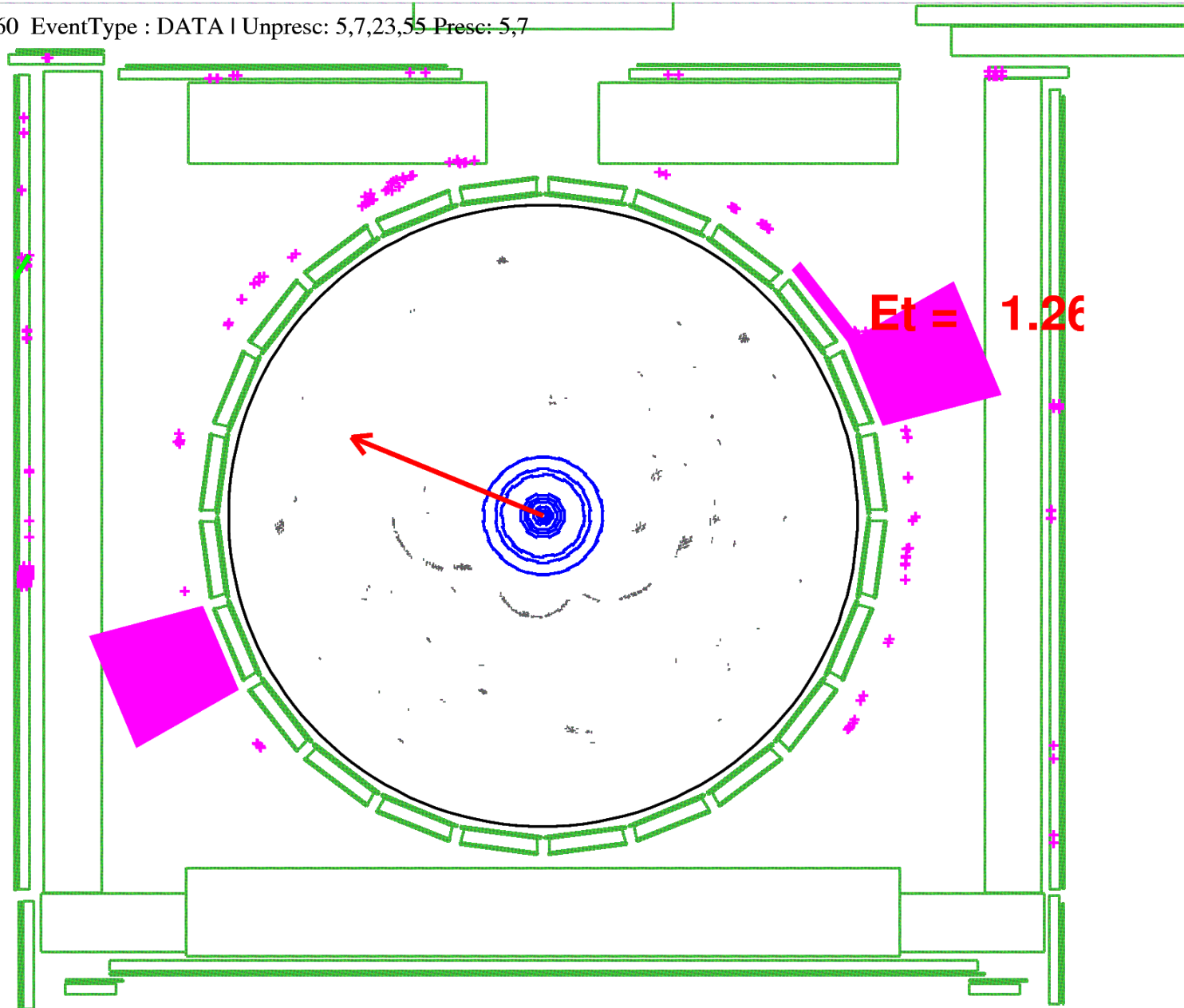Becouse of less tracks, smaller track Pt and turned off silicon, usually there is no vertex

Some interesting events
Clean back to back $\pi^0+\pi^0/\gamma+\gamma$

Event : 6422 Run : 277460 EventType : DATA | Unpresc: 5,7,23,55 Presc: 5,7
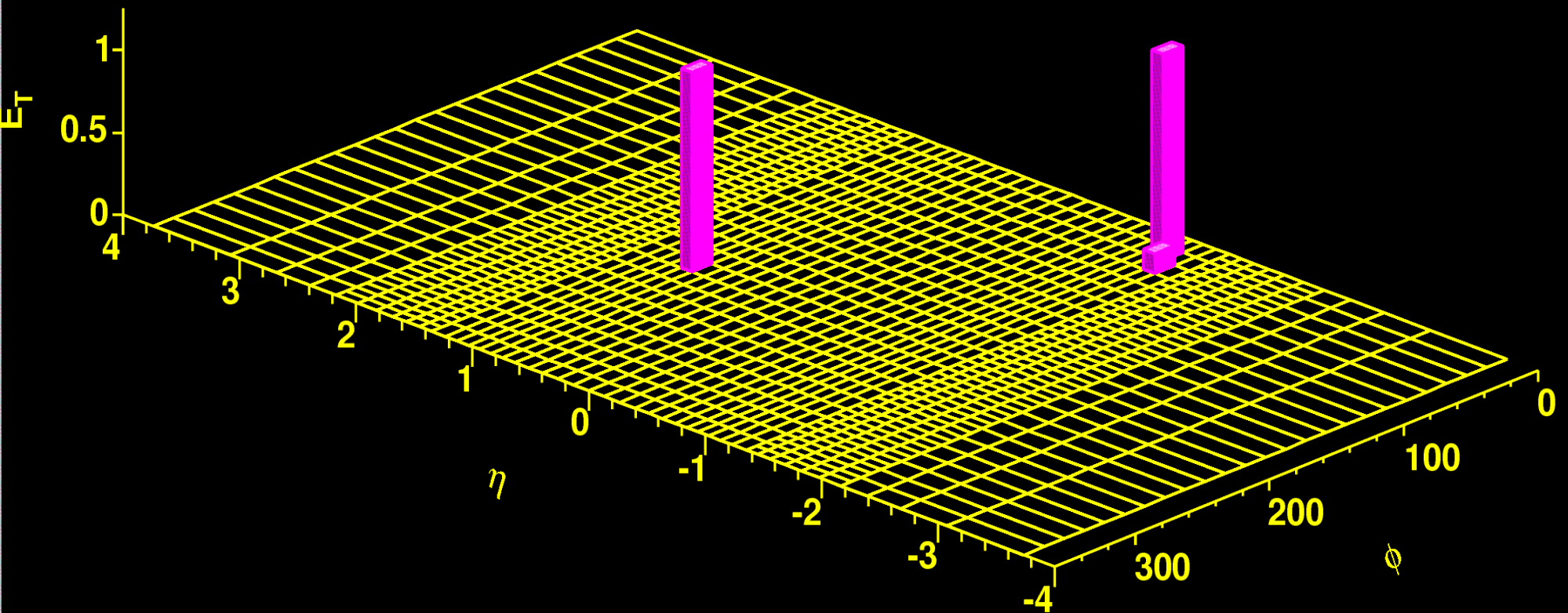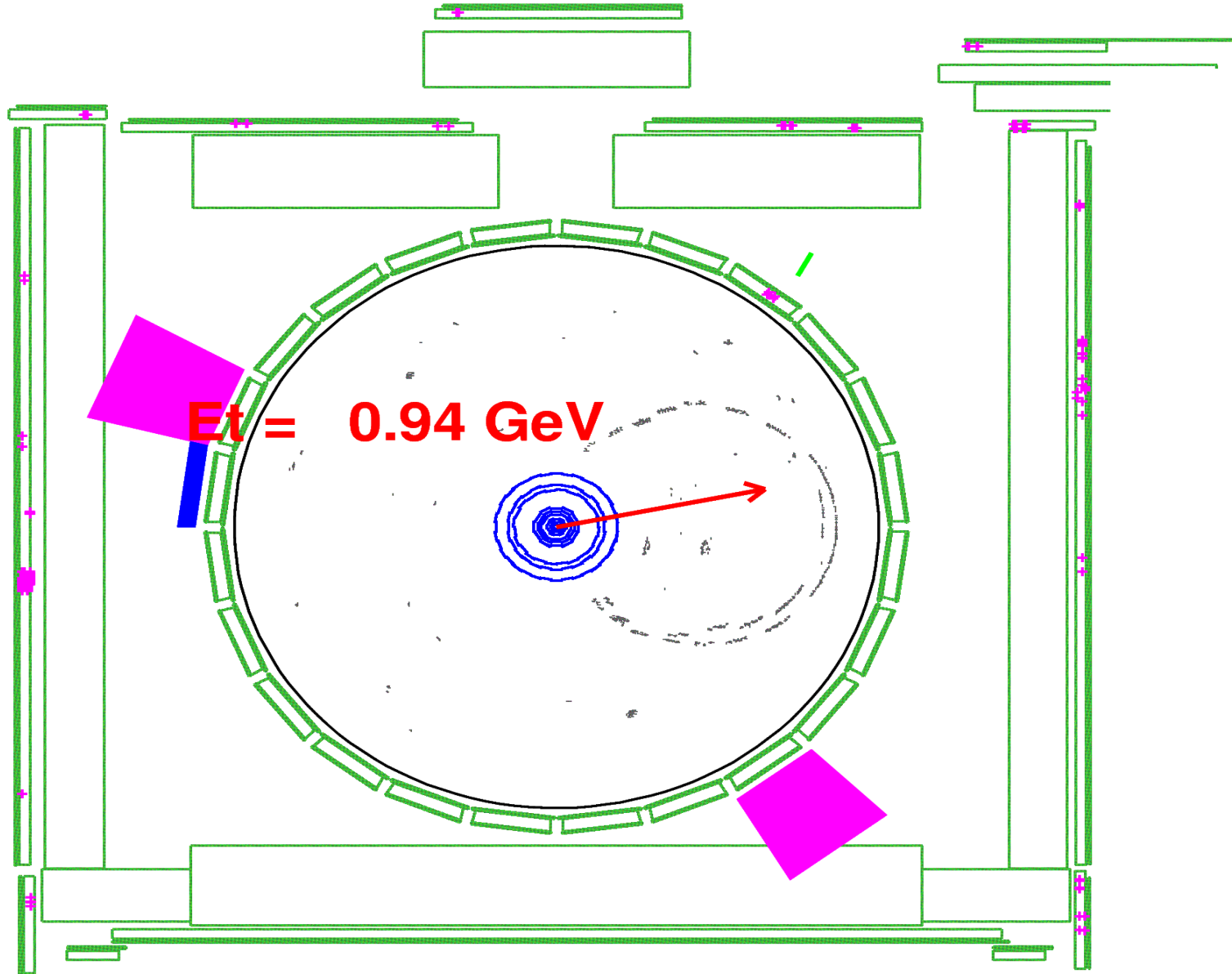
Missing Et
Et= 0.3 phi=2.7

List of Tracks
Id   pt   phi   eta

Et =   1.26

Some interesting events
Clean back to back $\pi^0+\pi^0/\gamma+\gamma$

Some interesting events
π^0+Loop+π^0/γ+Loop+γ

Event : 173662 Run : 277460 EventType : DATA | Unpresc: 5,7,23,55 Presc: 5,7
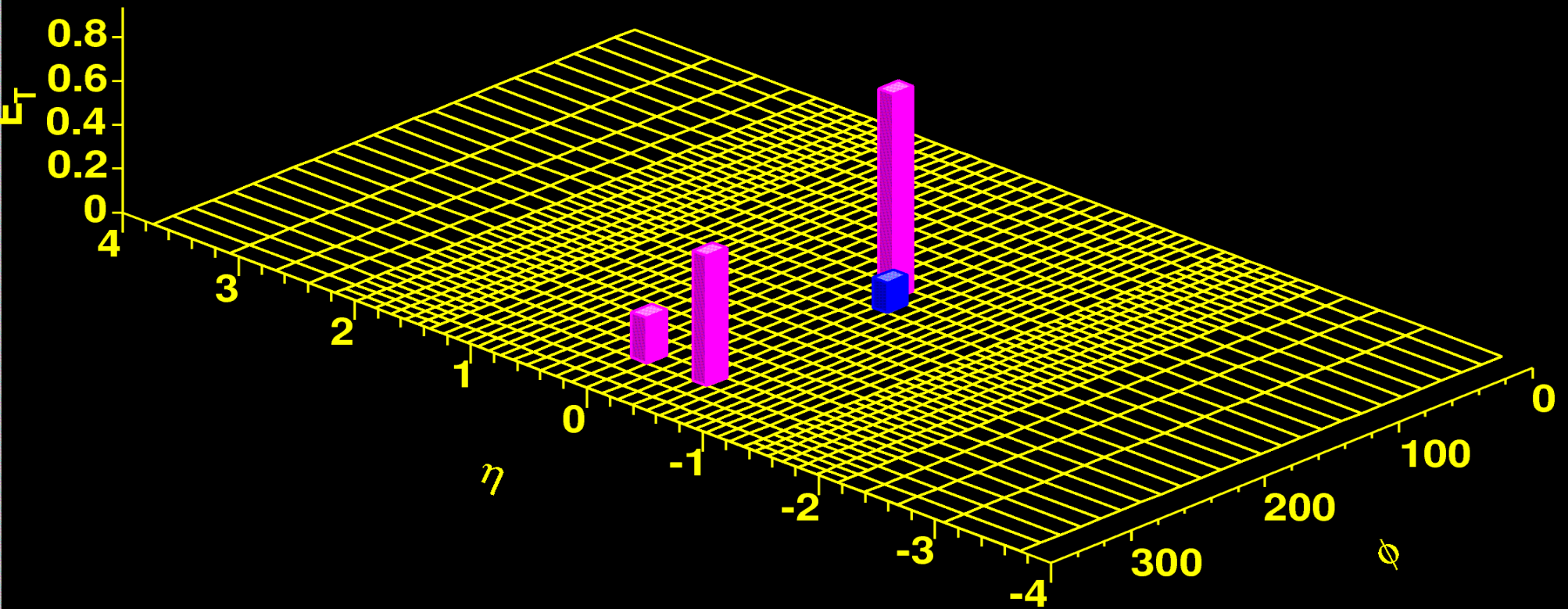
Missing Et
Et= 0.6 phi=0.2

List of Tracks
Id   pt   phi   eta

Et =   0.94 GeV

Some interesting events
π^0+Loop+π^0/γ+Loop+γ

Some interesting events
Many tracks – no vertex

Event : 237638 Run : 277460 EventType : DATA | Unpresc: 5,7,23,55 Presc: 5,7

Missing Et
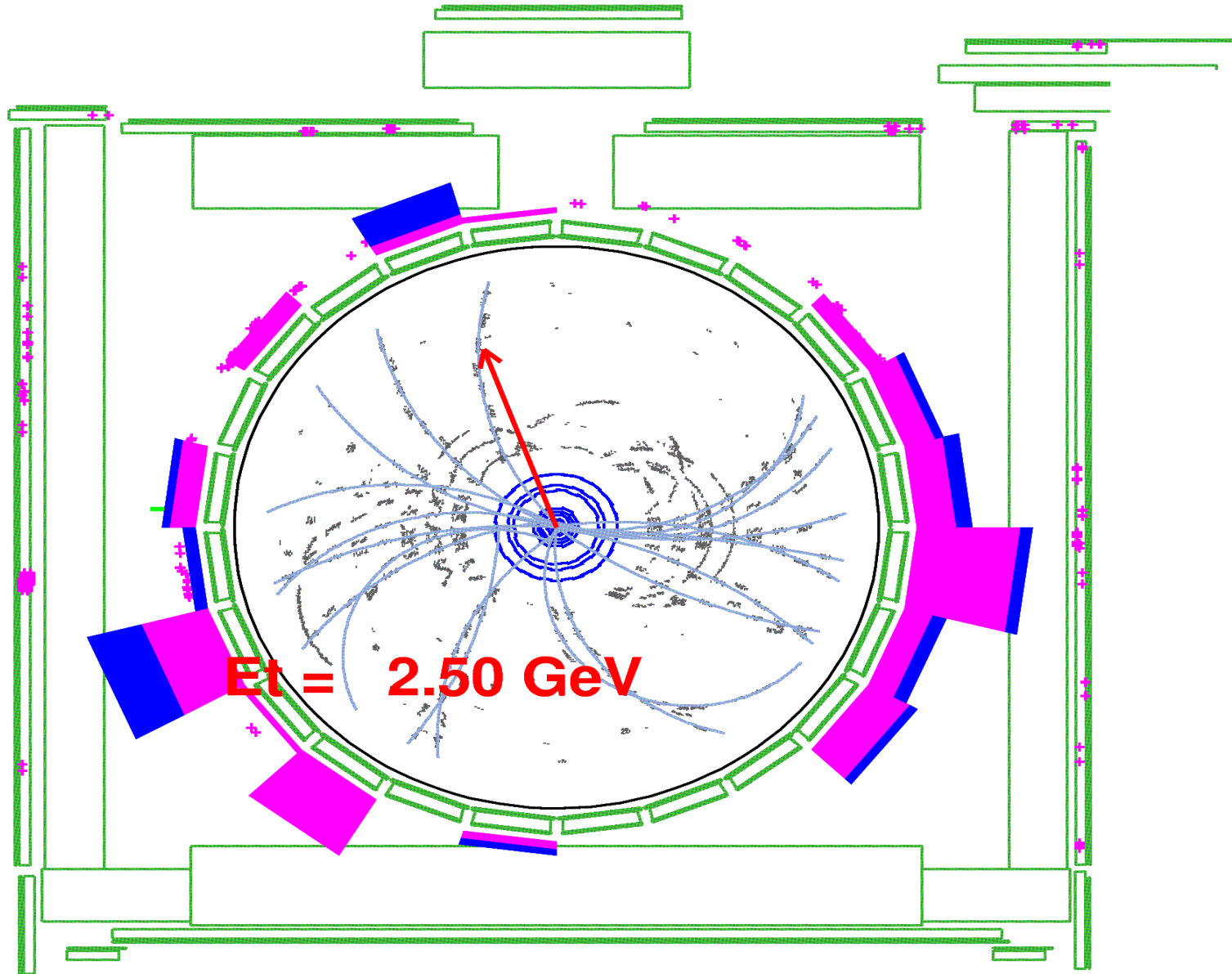Et= 2.2 phi=1.9

List of Tracks
Id   pt   phi   eta

Cdf Tracks: first 5
  83   -2.4 -0.0 -0.5
  84   1.2 -0.7 -0.4
  85   -1.0 -0.2 -0.1
  86   1.0   3.1   0.2
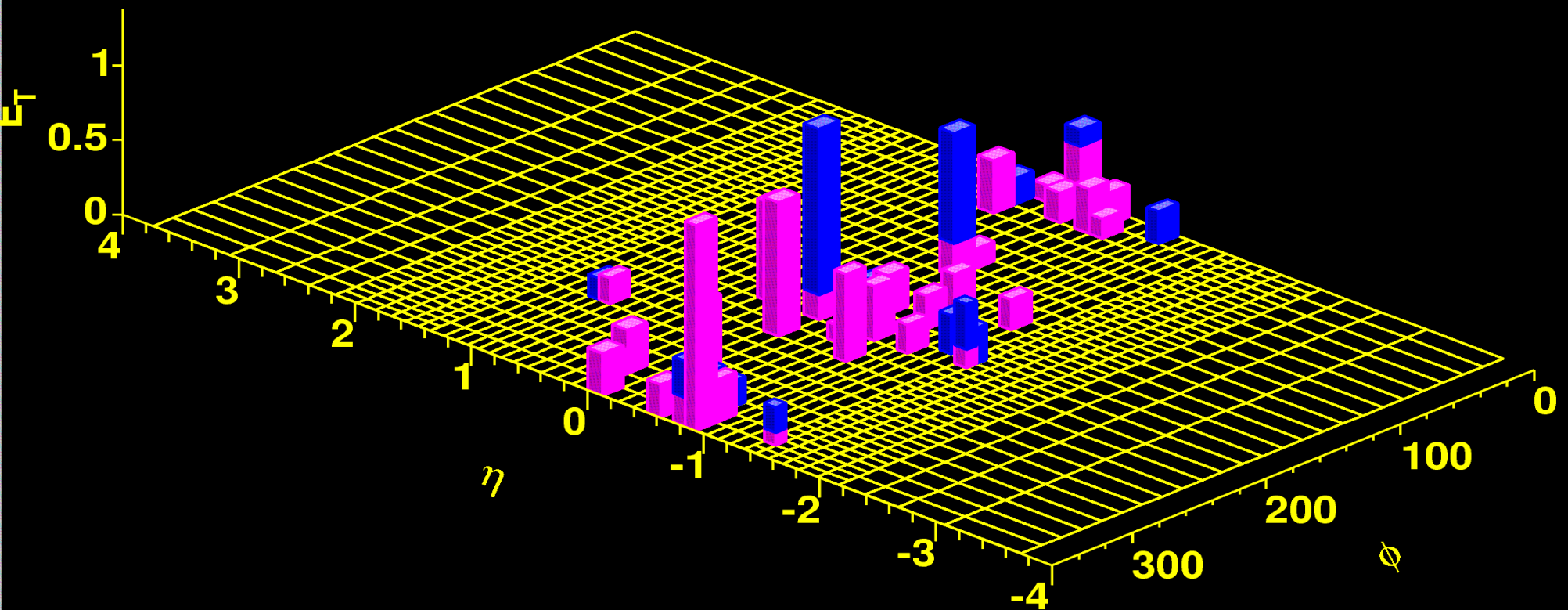 87   0.9 -0.3   0.2

To select track type
SelectCdfTrack(Id)

Et =   2.50 GeV

Some interesting events
Many tracks – no vertex

Some interesting events
Many tracks – no vertex

Event : 74087 Run : 277460 EventType : DATA | Unpresc: 5,7,23,55 Presc: 5,7

Missing Et
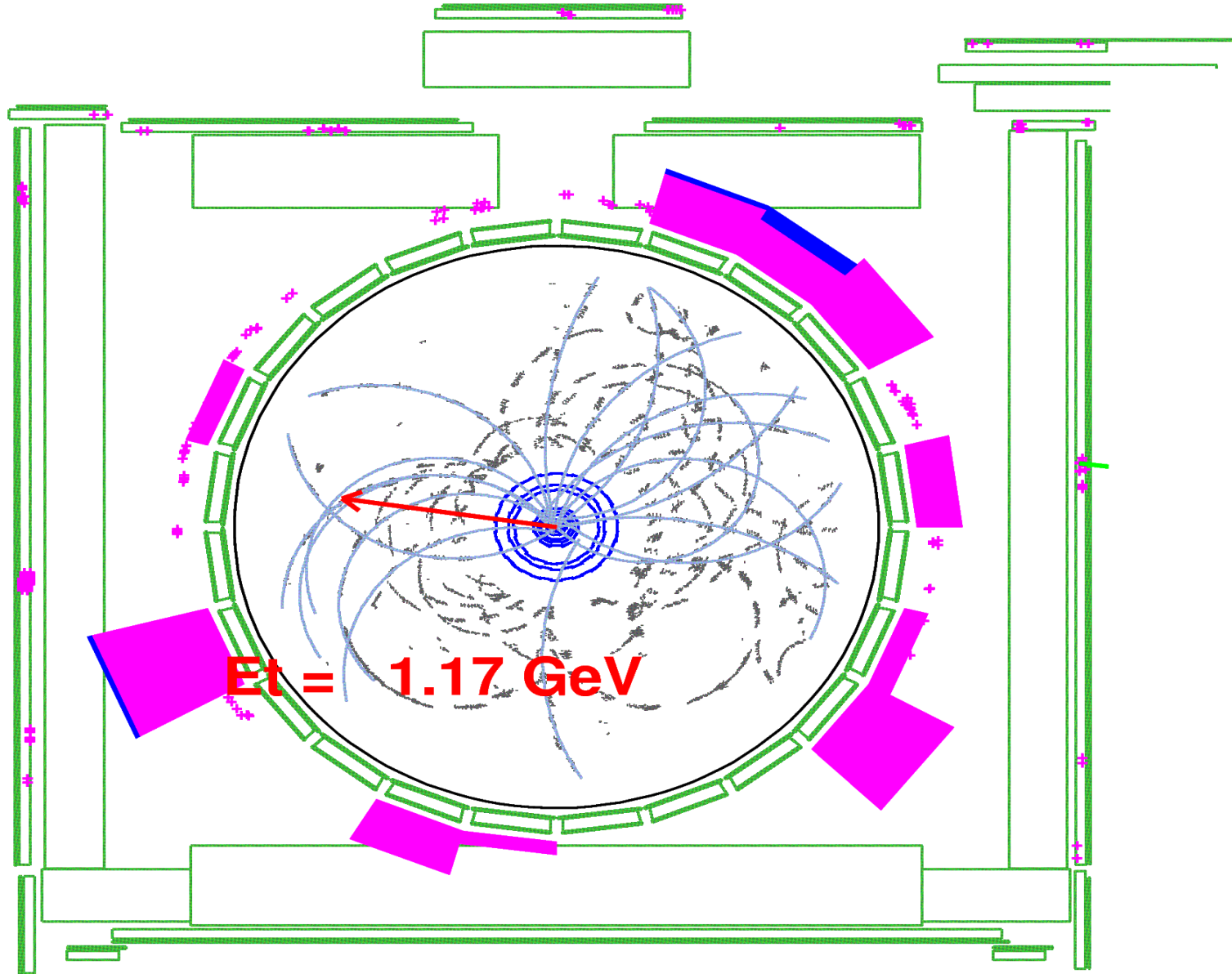Et= 2.7 phi=3.0

List of Tracks
Id   pt   phi   eta

Cdf Tracks: first 5
  58   −0.8   1.8 −0.5
  59   0.6   0.1 −0.2
  60   −0.6   0.3 −0.4
  61   0.5   −2.1 −0.2
  62   0.5   0.6   0.0
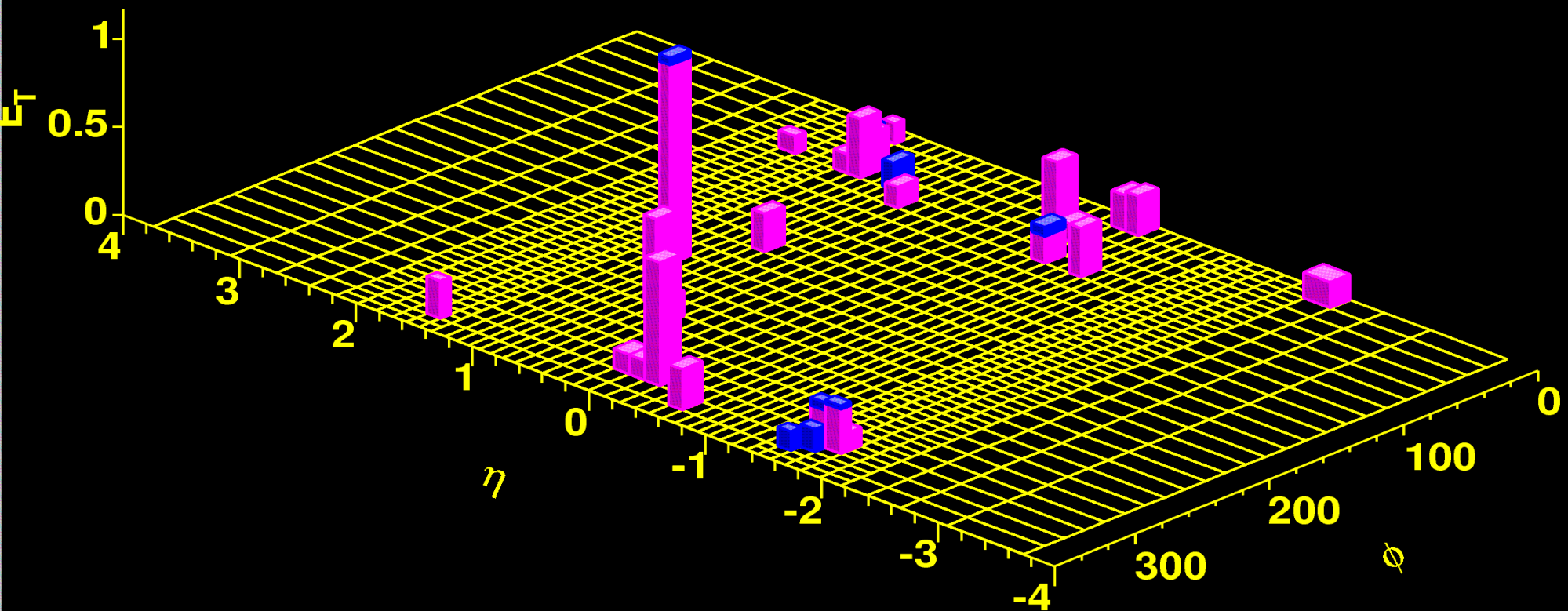
To select track type
SelectCdfTrack(Id)

Et =   1.17 GeV

Some interesting events
Many tracks – no vertex

Event : 74087 Run : 277460 EventType : DATA | Unpresc: 5,7,23,55 Presc: 5,7

Missing Et
Et= 2.7 phi=3.0
Jet Collection:
JetCluModule

Backup slides